In the Claims:

1 – 59. (Canceled)

60. (Original) A method of monitoring a vapor recovery system that recovers vapors expelled from a vehicle during refueling and returns the vapors back to an underground storage tank in a service station environment, comprising:

measuring the amount of fuel flow delivered to the vehicle at a plurality of fuel dispensing points;

measuring the amount of vapor flow recovered at said plurality of fuel dispensing points using at least one vapor flow sensor wherein the number of said at least one vapor flow sensors is less that the number of said plurality of fuel dispensing points;

calculating a ratio of said vapor flow to said fuel flow for each of said plurality fuel dispensing points; and

determining if said calculated ratio of said vapor flow to said fuel flow for each of said plurality of fuel dispensers is within an acceptable range.

61. (Original) The method of claim 60, wherein said step of determining is performed by a central electronic control.

62. (Original) The method of claim 61, wherein said step of measuring is performed in a vapor return pipeline common to all of said plurality of fuel dispensing points.

63. (Original) The method of claim 61, wherein said step of measuring is performed in a vapor return passage.

64. (Original) The method of claim 61, wherein said step of measuring the amount of fuel flow is performed by receiving information from meters that measure the amount of fuel flow for each of said plurality of fuel dispensing points.

65. (Original) The method of claim 61, further comprising the step of generating a signal when said ratio of vapor flow to fuel flow is not within said acceptable range.

66. (Original) The method of claim 61, further comprising the step of deactivating any of said plurality of fuel dispensing points that have a ratio of vapor flow to fuel flow determined to not be within said acceptable range.

67. (Original) The method of claim 60, further comprising the step of recording the measurements of said ratio of vapor flow to fuel flow in a memory.

68. (Original) The method of claim 60, wherein said step of calculating comprises dividing said amount of vapor flow by said amount of fuel flow when only one of said plurality of fuel dispensing points is active.

69. (Original) The method of claim 68, wherein said step of calculating is performed after each of said plurality of fuel dispensing points are idle.

70. (Original) The method of claim 69, wherein said step of calculating further comprises determining when said plurality of fuel dispensing points are idle by either monitoring the dispenser loop or the fuel level in the underground storage tank.

71. (Original) The method of claim 60, wherein said step of calculating comprises:

forming a generalized equation for the relationship between vapor flow, fuel flow, and the ratio of vapor flow to fuel flow, for each active fuel dispensing point in said plurality of fuel dispensing points; and

solving each of said generalized equations for said ratio of fuel flow to vapor flow for all active said plurality of fuel dispensing points.

72. (Original) The method of claim 71, wherein said generalized equation is in the form of

$R = (L^T L)^{-1} L^T A.$

73. (Original) The method of claim 60, further comprising determining if a fuel dispensing point in a group of said plurality of fuel dispensing points, wherein said group share a common vapor flow sensor, has a failure , comprising the steps of:

determining said vapor flow to fuel flow ratio for each of said fuel dispensing points in said group;

determining which of said ratios in said group are below a preset minimum; and determining which of vapor flow to fuel flow ratios in said group do not lower in value.

74. (Original) The method of claim 60, further comprising determining if a fuel dispensing point has a leak, comprising the steps of:

calculating said vapor flow to fuel flow ratio for each of said plurality of fuel dispensing points;

determining which of said ratios for each of said plurality of fuel dispensing points are below a preset minimum;

determining the average number of said ratios for each of said plurality of fuel dispensing points below said preset minimum; and

comparing the number of said ratios below the preset minimum for each of said plurality of fuel dispensing points to said average number to determine if with each of said plurality of fuel dispensing points has failed.

75. (Original) The method of claim 60, wherein said vapor flow is recovered in a vapor return path, and further comprising determining if said vapor flow is present in said vapor return path when none of said plurality of fuel dispensing points are active to determine if the vapor return path has failed.

76. (Original) The method of claim 60, wherein said central electronic control determines if a fuel dispensing point that services ORVR-equipped vehicles has failed, comprising the step of:

determining the vapor flow to fuel flow ratios for each of said plurality of dispensing points;

categorizing each of said ratios as either being (1) below a preset minimum value or (2) above or equal to said preset minimum value;

comparing each of said ratios below said preset minimum value, and above or equal to same preset minimum value to respective expected values for each and determining the individual proportional differences between each of said ratios below said preset minimum value, and above or equal to same preset minimum value to said respective expected values;

combining said individual proportional differences; and

comparing said individual proportional differences to a critical threshold value to determine if one of said fuel dispensing points has a failure.

77. (Original) The method of claim 60, wherein said central electronic control determines if a fuel dispensing point that services ORVR-equipped vehicles has failed, comprising the step of determining if said vapor flow to fuel flow ratio for each of said plurality of fuel dispensing points that are below a preset minimum value are statistically different from the proportion of said vapor flow to fuel flow ratios for all of said plurality of fuel dispensing points that are below said preset minimum value.

78. (Original) The method of claim 60, further comprising the steps of

monitoring the pressure level in the underground storage tank; and

selectively drawing a negative pressure into underground storage tank fuel when said pressure level is above a desired threshold pressure value.

79. (Original) The method of claim 60, further comprising the steps of:

identifying the start of an idle period for each of said plurality of fuel dispensing points;

determining whether pressure in the underground storage tank is equal to or below a minimum level;

selectively adjusting pressure in the underground storage tank to a preset lower level when the previously determined pressure is above the minimum level;

monitoring variation of the pressure in underground storage tank during the remainder of the idle period;

determining the end of said idle period; and

determining the acceptability of vapor containment in the underground storage tank based on the variation of said pressure during said idle period.

80. (Original) The method of claim 60, further comprising the steps of:

(a) determining at multiple times said amount of vapor flow;

(b) determining at multiple times said amount of fuel flow;

(c) performing said calculation of said ratio of said vapor flow to said fuel flow for each measurement in steps (a) and (b); and

(d) determining if said ratio of vapor flow to fuel flow for each of said calculations in step (c) is within an acceptable range.

81. (Original) The system of claim 31, wherein said central electronic control registers a leak in a fuel dispensing point within a group of said plurality of fuel dispensing points, wherein said group shares a common vapor flow sensor, if said common vapor flow sensor registers a reverse vapor flow when said group of said plurality of fuel dispensing points is idle.

82. (Original) The method of claim 60, further comprising registering a leak in a fuel dispensing point in a group of said plurality of fuel dispensing points, wherein said group shares a common vapor flow sensor, if said common vapor flow sensor registers a reverse vapor flow when said group of said plurality of fuel dispensing points is idle.

83 – 85. (Canceled)